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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/844,532	04/30/2001	Warren M. Farnworth	97-1433.1	3740

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EXAMINER

CHANG, RICK KILTAE

ART UNIT	PAPER NUMBER
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3729

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/844,532	<b>Applicant(s)</b> FARNWORTH ET AL	
	<b>Examiner</b> Rick K. Chang	<b>Art Unit</b> 3729	

-- **Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 34-58 is/are pending in the application.
- 4a) Of the above claim(s) that are not recited in Item No. 6 below is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 34,35,38-41,43 and 49-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 34-35, 39-41, 43, 49 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fjelstad et al (US 5,615,824) in view of Maruyama et al (US 6,661,247).

Fjelstad discloses in Figs. 3-4 leads 28 having asperities are shaped by a pressing tool located above and in contact with 75 and the leads are heated (col. 7, line 57). Further, Fjelstad discloses providing a substrate (Fig. 4) having a surface (top of 100); forming a plurality of leads (22); forming outer layers (34); a blade (30 digs into the surface of ball 72); a conductive via (plated 46); a contact or pads (bottom 58s).

Fjelstad fails to disclose shaping the terminal portions with a curvature approx. equal to the radius of the bumped contact.

Maruyama discloses that various sizes of the bumps are used to shape the leads (col. 7, lines 18-19).

It would have been obvious to one of the ordinary skill in the art to modify Fjelstad by providing bumps that are equal to the radius of the bumped contact to shape the terminal portions with a curvature approx. equal to the radius of the bumped contact, as taught by Maruyama, for the purpose of positively connecting the bumps to the terminal portions to improve reliability of the test.

Art Unit: 3729

3. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fjelstad et al (US 5,632,631)/Maruyama et al (US 6,661,247) in view of Sugiyama et al (US 4,766,666).

Fjelstad/Maruyama disclose etching a recess (Fig. 7 shows forming 46 by etching), but fails to disclose providing a semiconductor material.

Sugiyama discloses providing a semiconductor material (30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Fjelstad/Maruyama by providing a semiconductor material, as taught by Sugiyama, for the purpose of electrically communicating between two surfaces using the semiconductive material instead of metal.

4. Claims 40-41, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fjelstad et al (US 5,632,631)/Maruyama et al (US 6,661,247) in view of Kazle (US 5,936,847).

Fjelstad/Maruyama fail to disclose providing a conductive polymer and a carbon film.

Kazle discloses providing a conductive polymer (140a).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Fjelstad/Maruyama by providing a conductive polymer, as taught by Kazle, for the purpose of forming electrical communication between two electronic components without need for solder or gold.

Further, Kazle discloses providing a conductive polymer which includes a carbon film. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a carbon film, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious

Art Unit: 3729

design choice because applicants have not disclosed that a carbon film provides an advantage or solves a stated problem. *In re Leshin*, 125 USPQ 416.

### ***Response to Arguments***

5. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

After reviewing the record, Examiner responded in a timely manner to the amended claims within the time limit given to the Examiner by the USPTO. Further, the first non-responsive Office Action was given a bone fide attempt by the applicants.

### ***Interviews After Final***

6. Applicant note that an interview after a final rejection must be submitted briefly in writing the intended purpose and content of the interview (the agenda of the interview must be in writing). Upon review of the agenda, the Examiner may grant the interview if the examiner is convinced that disposal or clarification for appeal may be accomplished with only nominal further consideration. Interviews merely to restate arguments of record or to discuss new limitations will be denied. See MPEP 714.13 and 713.09.

### ***Conclusion***

7. Please provide reference numerals (either in parentheses next to the claimed limitation or in a table format with one column listing the claimed limitation and another column listing corresponding reference numerals in the remark section of the response to the Office Action) to all the claimed limitations as well as support in the disclosure for better clarity (optional). Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the

Art Unit: 3729

**application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.**

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick K. Chang whose telephone number is (571) 272-4564. The examiner can normally be reached on 5:30 AM to 1:30 PM, Monday through Thursday.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.

Application/Control Number: 09/844,532

Page 6

Art Unit: 3729



RICHARD CHANG  
PRIMARY EXAMINER

RC

January 13, 2005